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Critical revision of myxomycetes in the Buenos Aires BAFC herbarium — 1

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Abstract — The first analytical results of 32 myxomycetes specimens kept at the BAFC herbarium are presented. The following species stand out: *Craterium obovatum, Diderma meyerae, Diderma stellulum*, *Didymium ovoideum*, *Stemonitis pallida, S. webberi*, *Trichia decipiens* var. *olivacea*, and *T. subfusca.* Type material descriptions of *Stemonitis pallida* and *S. webberi* are also provided. Optical microscope (LM) and scanning electron microscope (SEM) micrographs illustrate the most representative characteristics of species that are rare or not often mentioned in the literature.

Key words — *Protozoa*, myxobiota, slime moulds, Argentina, USA, taxonomy

Introduction

The BAFC herbarium currently at the Biological Sciences Department of the School of Exact and Natural Sciences, Buenos Aires University, was created in the 1960s from Rolf Singer's 1960–66 collections and other materials. The herbarium later added donations from Irma Gamundí, Jorge E. Wright, Carlos Gómez, Emilio del Busto, and María E. Ranalli (among others), and Jorge W. Wright arranged for shipping mycological materials from the old Ministry of Agriculture and the Instituto Forestal Nacional to BAFC. During the 1970s, Jorge Deschamps, Alicia Godeas, Daniel Cabral, Silvia López, Mónica Adler, Andrea Romero and others continued with this expansion. During the last decade following the death of Jorge E. Wright, the fungal collections in the herbarium have not increased appreciably. The herbarium currently curates approximately 28,000 mycological specimens, including 476 myxomycetes.

In this paper, we present critical revisions of some rare or taxonomically significant myxomycetes kept in the BAFC herbarium. Some of this material originates from other countries.

Materials & methods

The material studied originated from Argentina (Buenos Aires, Santa Fé, Misiones, Tucumán, and Tierra del Fuego provinces), USA (New York, Maryland, and California states), and Brazil (Rio Grande do Sul state). The collections are preserved in the BAFC herbarium (School of Exact and Natural Sciences, University City, II Pavilion, 4th. floor, University of Buenos Aires, Argentina).

Slide mounts in Hoyer's medium of each specimen are preserved in the Plant Biology herbarium of the University of Alcalá, Madrid (AH, Alcalá de Henares). Spore measurements were made using an oil immersion objective and include such surface structures as warts and spines.

Scanning electron microscopy (SEM) micrographs were taken at the University of Alcalá de Henares using a Zeiss DSM-950 instrument. Sporocarps were rehydrated in concentrated ammonium hydroxide (28–30%) for 30 minutes, dehydrated in aqueous ethanol (70%) for 30 minutes, fixed for 2 hours in pure ethylene glycol dimethyl ether (= 1,2-dimethoxymethane) and finally immersed in pure acetone for at least 2 hours followed by critical point drying and sputtering with gold-palladium. This technique allows the use of very little material (part of a single sporocarp or even no more than a few spores).

The terminology used for the spore-producing stages follows Dörfelt & Marx (1990) and Lado & Pando (1997). Spore wall ornamentation as seen by SEM is described according to the terminology proposed by Rammeloo (1974, 1975) and abbreviations for author citations follow Kirk & Ansell (1992). The nomenclature used follows Lado (2001, 2005–11).

Taxonomy

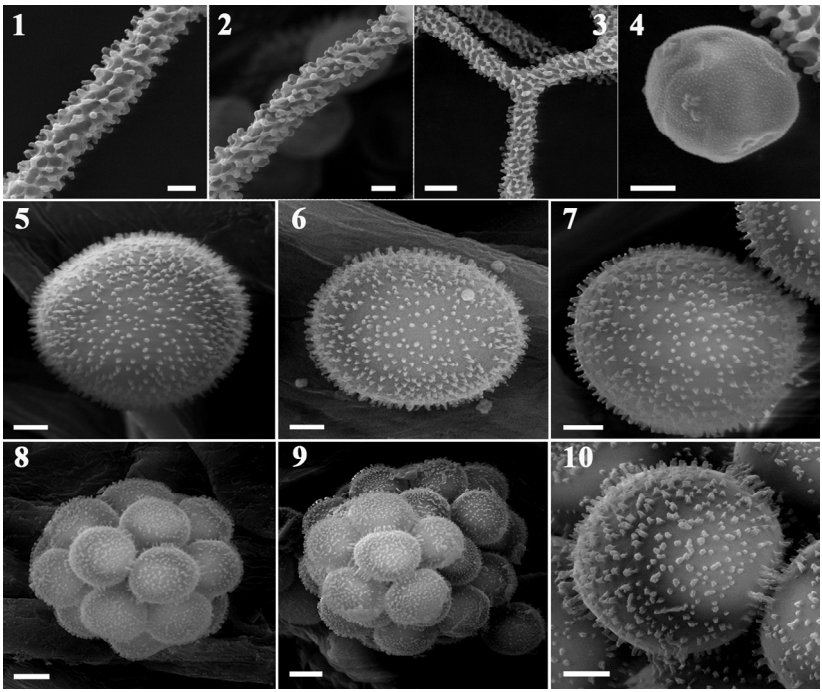
Arcyria globosa Schwein., Schriften Naturf. Ges. Leipzig 1: 64 (1822) Figs. 1–4

Specimen examined: **USA**: **New York**, Centreport, on crown debris of *Castanea* sp., VIII-1891, leg. O.F. Cook (BAFC 30398, ex "BPI 3405" [= BPI 805828]).

Comments — This species is characterized by its isolated or gregarious, stipitate sporocarps (0.3–0.7 × 0.5–1.5 mm), globose, white to greyish white in colour, a fugacious peridium with a wide calyculus and concolorous stipe of 0.2–0.8 mm length. Capillitium elastic, formed by 3.5–4.5 µm diam. filaments with warts which are usually arranged in more or less marked spirals. Spores 7.5–8.5 µm in diam., hyaline, with dispersed warts. Under SEM, spore ornamentation is seen to comprise dispersed groups of irregular verrucae. The remaining spore wall contains a surface covered by tiny bacula, which cannot be seen under the light microscope (LM). The capillitial filaments contain warts that are joined in short crests with a helicoidal arrangement.

Badhamia affinis Rostaf., Sluzowce monogr.: 143 (1874) Figs. 5–7

Specimen examined: **ARGENTINA**: **Buenos Aires**, Banfield, on semi-rotten bark of *Manihot grahamii* Hook., 5-IV-1973, leg. J. Deschamps (BAFC 22822, as *Badhamia cinerascens*).



Figs. 1–10 ***Arcyria globosa*** BAFC 30398 (1–4): 1–3. Capillitium. 4. Spore (SEM). ***Badhamia affinis*** BAFC 22822 (5–7, SEM): Spores. ***Badhamia versicolor*** BAFC 22854 (8–10. SEM): 8, 9. Packets of spores. 10. Spore. Bars: 1, 2, 4–7, 10 = 2 µm; 3, 8, 9 = 5 µm.

Comments — This species is characterized by its globose to subglobose sporocarps which are laterally squashed (0.5–1 × 0.4–1 mm) and isolated or in groups of 2–5, sometimes forming short substipitate plasmodiocarps which are dark brown at the insertion with the substrate. The peridium is whitish and warted by the accumulation of calcium carbonate. Dehiscence is apical and irregular. The capillitium is a three-dimensional net of calcium carbonate tubules, which join in the centre of the sporotheca to form a whitish strongly marked pseudocolumella. Spores are 14–15(–16) µm in diam., globose to subglobose, dark violet, with abundant dense warts. Regularly distributed bacula form the spore ornamentation (SEM).

The presence of a marked white pseudocolumella at the centre of the sporotheca and the large spore size are two important diagnostic characters for *B. affinis*. See Moreno & Oltra (2010) for more information, including LM and SEM photographs, can be found in.

Badhamia cinerascens G.W. Martin, which is rarely cited, is a rare and critical species from Colombia. It differs from *B. affinis* by its lack of a pseudocolumella and thin peridium.

Badhamia versicolor Lister, J. Bot. 39: 81 (1901) Figs. 8–10.

Specimen examined: **ARGENTINA**, **Tierra del Fuego**, Puerto Harberton, on bark of possibly *Nothofagus pumilio* (Poepp. & Endl.) Krasser "lenga", 2-II-1973, leg. J.E. Wright & E. del Busto 2177 (BAFC 22854).

Comments — This material was previously cited by Deschamps (1976). The specimen lacks calcium carbonate in the peridium, although it has some dispersed granules. Its clustered spores form thick hollow balls of 30–40 spores in each cluster. Individual spores are ovoid to triangular with obtuse extremes of 11–13 × 10–11 µm diam. and are more strongly warted on the outer exposed surface. Irregularly distributed bacula form the spore ornamentation (SEM).

This species is known only from Tierra del Fuego, Argentina (Arambarri 1975; Deschamps 1976) and Chubut in Patagonia (Wrigley de Basanta et al. 2010).

Craterium obovatum Peck, Bull. Buffalo Soc. Nat. Sci. 1: 64 (1873) Figs. 11–13

= *Badhamia rubiginosa* (Rostaf.) Rostaf., Sluzowce monogr. suppl.: 5 (1876)

Specimen examined: **USA**, **New York**, Suffolk Co., Centerport, VIII-1891, leg. O.F. Cook 1366, as *B. rubiginosa* (BAFC 28684).

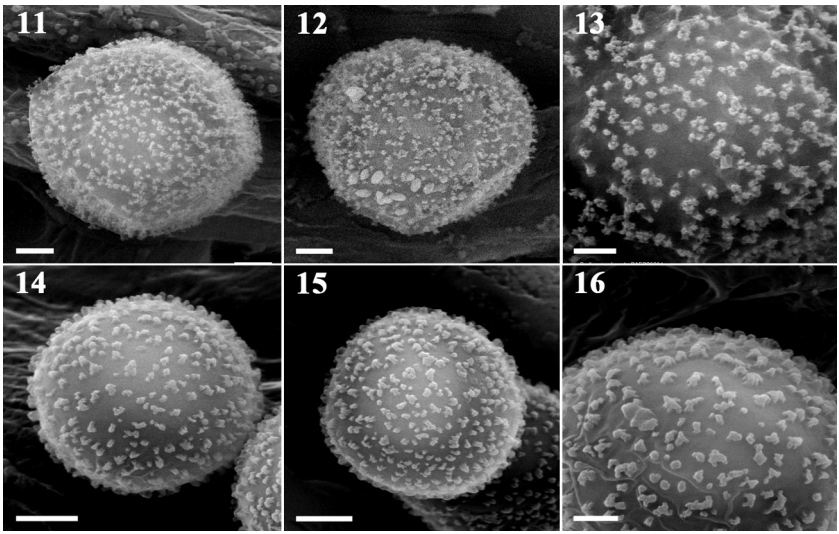
Comments — This species is characterized by its stipitate sporocarps, which are isolated, gregarious to caespitose and form dense fructifications, 1–2 mm total height. Sporothecae are obovoid, 0.8–1 × 0.4–0.6 mm, brownish-purple and with a thin peridium. Dehiscence is apical and operculate. Stipe cylindrical, 0.5–1 mm in length and usually equal or shorter than the sporotheca. Pseudocolumella is not very well formed. The capillitium is formed by very abundant whitish nodules. Hypothallus dark brown, membranous. Spores are 12–15 µm in diam., globose to slightly polyhedric, dark violet, with tightly arranged warts that sometimes form crests. Dense bacula with warty coralloid apices form the spore ornamentation (SEM).

Excellent photographs of the sporocarps of this species can be found in Poulain et al. (2011). This typical and strange spore ornamentation (SEM) has been observed in specimens from Baja California and Sonora (Mexico) by Lizárraga et al. (1999, 2007).

Diderma meyerae H. Singer, G. Moreno, Illana & A. Sánchez, in Moreno et al., Cryptog. Mycol. 24: 53 (2003) Figs. 14–16

Specimen examined: **USA, California**, Shasta Co.,Sunflower Flat, Lassen Volcanic National Park, elevation 6000 feet, on conifer wood, 7-II-1965, leg. D.T. Kowalsky. (BAFC [ex Bridge Cooke Herbarium 34923] as *Diderma niveum*).

Comments — The whitish to straw-colored fructifications are arranged in dense groups. Sporothecae are 1.5–3 mm diam., globose to subglobose, and sometimes compacted together. Dehiscence is apical and irregular. Peridium



Figs. 11–16. ***Craterium obovatum*** (BAFC 28684): 11, 12. Spores (SEM). 13. Spore ornamentation. ***Diderma meyerae*** (BAFC [ex Bridge Cooke Herbarium 34923]): 14, 15. Spores (SEM). 16. Spore ornamentation. Bars: 11–12, 14–15 = 2 µm; 13, 16 = 1 µm.

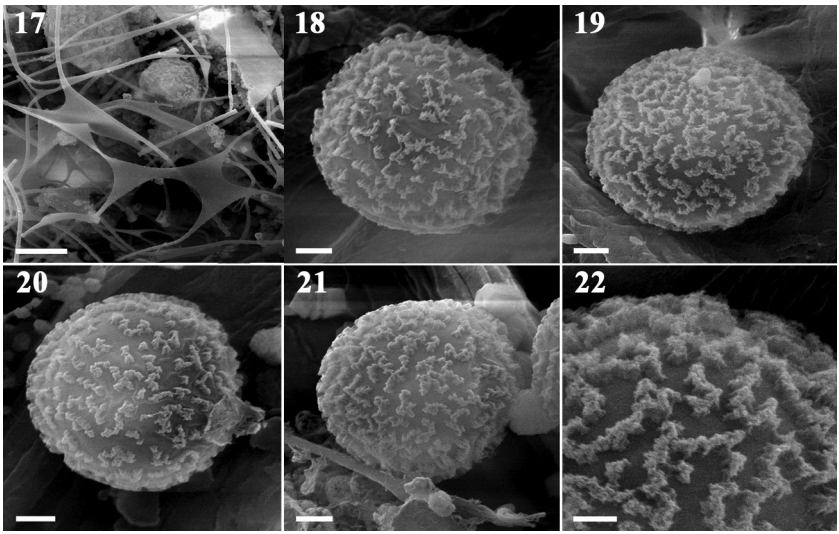
double, the external layer crustose and calcareous, and internal layer transparent to slightly iridescent. Pseudocolumella central, of variable morphology, globose to subglobose or conical with dark straw to ferruginous cream colours. Capillitium with dark filaments (1–2 µm width), lighter and bifurcate at the tips. Spores dark in mass, (7–)8–9 µm in diam., globose to subglobose, light violet (LM), with thick warts to short crests. Verrucae, some joining to form short crests, comprise the ornamentation (SEM).

Diderma meyerae is easily recognised under the LM from its scarcely projecting, non-spinose ornamentation formed by warts that join to form short crests. Moreno & al. (2003) described *D. meyerae* from European nivicolous material (Austria and France). This species is often confused with *D. niveum*. The European material has larger spores (10–13(–15) µm diam.), but the spore ornamentation and other characteristics are similar to those of the American specimen.

Diderma stellulum M.L. Farr, Int. J. Mycol. Lichenol. 3: 208 (1988) Figs. 17–22

Specimen examined: **BRAZIL**, **Rio Grande do Sul**, Porto Alegre, Morro Santana, 31-VIII-1984, leg. C. Rodriguez (BAFC 32313, as *D. stellula*).

Comments — Sporocarps isolated to gregarious, stipitate, dark brown, reminiscent of the colour of *Lepidoderma trevelyanii* (Grev.) Poulain & Mar.



Figs. 17–22. ***Diderma stellulum*** (BAFC 32313: 17. Capillitium. 18–21. Spores (SEM). 22. Spore ornamentation. Bars: 17 = 10 µm; 18–21 = 2 µm; 22 = 1 µm.

Mey, 1.5–2 mm width when opened. Stipe approximately 1 mm height, 0.2 mm wide, dark brown and widened at its base. Peridium with three layers, the outer layer cartilaginous of a brown colour, the middle layer is whitish, thick with calcareous granules, the inner layer is attached to the middle layer which is membranous and iridescent. Dehiscence stellate, with recurved rays. Pseudocolumella not very prominent, 0.4–0.6 mm, flat, rough, whitish to straw-coloured. Hypothallus membranous. Capillitium, dark, reticulate, formed by thin filaments of 0.5–1 µm diam. and with wider nodules of 5–40 µm diam. Spores 12–14 µm diam., globose, dark brown and strongly warted. These warts are joined forming crests or a marked subreticulum; SEM shows that the spore ornamentation is formed by bacula joined in long sinuous crests, giving a somewhat subreticulate appearance.

Farr (1988), who described *D. stellulum* from a single specimen from Brazil, did not indicate where the species type is deposited. The BAFC specimen comes from the same type locality and was collected by the same person. Although the collection date is two years before the one indicated by Farr as "comm. 1986", it is possible that this specimen is part of the type, although Farr described a slightly larger spore (14–16 µm).

Diderma stellulum is macroscopically similar to *Lepidoderma trevelyanii,* which is differentiated by its peridial crystalline scales and smaller (11–12 µm) warted spores.

Diderma asteroides (Lister & G. Lister) G. Lister has different sporocarps and smaller (11–12 µm) warted spores.

Diderma antarcticum (Speg.) Sturgis differs in its sessile sporothecae, circumscissile dehiscence, globose columella, rugged, double peridium, capillitium filaments bearing small spines and spinose spores (Arambarri 1973; Wrigley de Basanta et al. 2010).

Diderma gracile Aramb. is a similar species which differs in its long stipe which is approximately twice the size of the sporotheca, irregular dehiscence forming petaloid non-recurved lobes, a pulvinate strongly marked columella and thin capillitial nodules (Arambarri 1973; Wrigley de Basanta et al. 2010).

Diderma subasteroides M.L. Farr, which is also stipitate, differs due to the irregular dehiscence, capillitium without marked nodules, and warted spores (Farr 1971). By SEM, the African specimens (Malawi and Rwanda) from Buyck (1983) have large warts that form a subreticulum similar to the specimen studied in this paper.

Didymium ovoideum Nann.-Bremek., Acta Bot. Neerl. 7: 780 (1958) Figs. 23–26

Specimen examined: **USA**, **Maryland**, Beltsville, on dead leaves, twigs, 7.VIII-1967, leg. M.L. Farr 4072 (BAFC 26535).

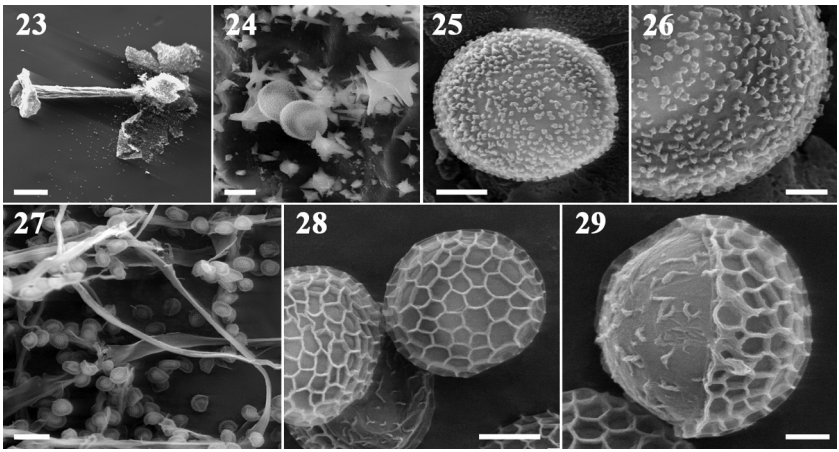
Comments — This species is characterized by its large sporocarps, 1–1.2 mm total height and its stipitate and gregarious habit. Sporothecae 0.6–0.8 × 0.4–0.5 mm, subglobose to ovoid. Peridium thin, fragile with irregular dehiscence, whitish and pulverulent due to the accumulation of calcium carbonate crystals. Stipe approximately 1 mm long, cylindrical, reddish and longitudinally grooved. Pseudocolumella ovoid, yellow, covered with calcium carbonate crystals. The capillitium is branched and anastomosed and formed of hyaline to pale yellowish filaments approximately 1 µm diam. Spores 7–8.5 µm in diam., globose, dark to light violet, covered by small warts. Short, dense verrucae joined into low crests compose the spore ornamentation (SEM).

This species is known only in the Northern Hemisphere (www.discoverlife.org) and Central America (Costa Rica; Lado & Wrigley de Basanta 2008).

Physarum compressum Alb. & Schwein., Consp. fung. lusat.: 97 (1805)

Specimen examined: **ARGENTINA, Misiones**, El Pesado, on remains of *Bromeliaceae*, V-1964, leg. C.E. Gomez (BAFC 22130, as *P. polycephalum*).

Comments — This species is characterized by its laterally compressed, whitish sporothecae with a black to whitish stipe, abundant short and rounded capillitial nodules, whitish in colour and globose spores of 10-12 µm diam. and warted ornamentation. In Argentina, according to (Deschamps 1976; Crespo & Lugo 2003), this species was recorded in the provinces of Buenos Aires, Jujuy, Misiones, and Tucumán.



Figs. 23–29. ***Didymium ovoideum.*** BAFC 26535 (24–26): 23. Sporocarp and columella (SEM). 24. Calcium carbonate crystals. 25. Spore (SEM). 26. Spore ornamentation. ***Reticularia jurana*** BAFC 22846 (27–29): 27. Pseudocapillitium. 28. Spore (SEM). 29. Spore ornamentation reticulate on one hemisphere and smooth on the other. Bars: 23 = 200 µm; 24 = 5 µm; 25, 28 = 2 µm; 26, 29 = 1 µm; 27 = 10 µm.

Physarum polycephalum Schwein., Schriften Naturf. Ges. Leipzig 1: 63 (1822)

Specimens examined: **ARGENTINA, Buenos Aires**, Tigre, 12-X-1968, leg. E. Barbetti (BAFC 22238); Belén de Escobar, El Cazador, on a rotting trunk of Salicaceae, 10-V-1969, leg. J. Deschamps & E. del Busto (BAFC 22232): As. Llavallol, Inst. Fit. Santa Catalina, on dry leaves and bark, III-1972, leg. A. Fortuny (BAFC 22610).

Comments — A widely distributed species, mostly found in the American continent (www.discoverlife.org). One cited collection has yellowish sporothecae, but two others are whitish as described in Martin & Alexopoulos (1969).

Reticularia jurana Meyl., Bull. Soc. Vaud. Sci. Nat. 44: 297 (1908) Figs. 27–29

Specimen examined: **ARGENTINA, Buenos Aires**, La Plata, Los Hornos, on living *Myoporum laetum* G. Forst., 6-I-1972, leg. J. Deschamps (BAFC 22846, as *R. intermedia*).

Comments — The studied specimen is fragmented but can be seen to develop from a dark reddish, pulvinate aethalium with a brilliant and very fragile peridium; abundant pseudocapillitium, delicate and non-rigid, formed by filaments that are flattened to form a three-dimensional net. Spores, dark in mass, 6–7 µm diam., reticulate on one hemisphere and smooth on the other. The SEM reveals that the spore ornamentation of one hemisphere is formed by a reticulum of 8–12 angular to hexagonal meshes with solid, unperforated muri; the other hemisphere is smooth or with a faint ornamentation.

Reticularia jurana has been recently cited from Patagonia (Argentina) in *Nothofagus* woods (Wrigley de Basanta et al. 2010). In Argentina it has been confused with *Reticularia intermedia* Nann.-Bremek., which is distinguished by a pseudocapillitium formed by branched filaments that do not form a three-dimensional net.

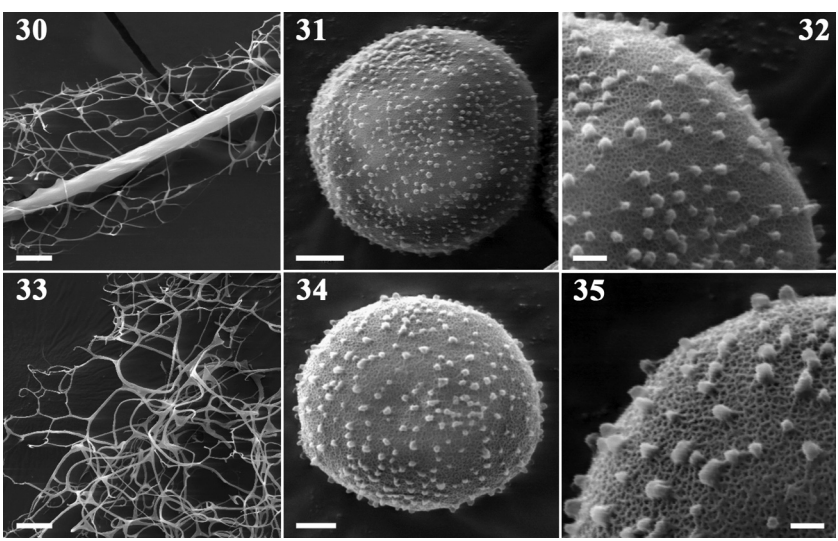
Stemonitis axifera (Bull.) T. Macbr., N. Amer. Slime-moulds: 120 (1899) Figs. 30–35

= *Stemonitis smithii* T. Macbr., Bull. Iowa Univ. Lab. Nat.Hist. 2: 381 (1893)

Specimens examined: **ARGENTINA**, **Buenos Aires**, Llavallol, Santa Catalina, in logs, 2-III-1970, leg. L. Frias & G. Rovetta (BAFC 22306, as *S. flavogenita*); 2-III-1970, leg. J. Deschamps (BAFC 22310, as *S. flavogenita*).

Comments — Sporocarps stipitate, 3.5-6 mm total height. Sporothecae dark to light reddish. Stipe cylindrical, dark reddish, 0.8-1.5(-2) mm length. Columella reaching to the apex. Capillitium with very open and wide meshes, more than 35 µm diam. Spores hyaline to slightly dark yellowish, (6-)7-8 µm diam., globose, almost smooth to lightly warted; (SEM) ornamentation of irregularly distributed verrucae to short bacula and a spore surface covered by a complete reticulum only visible in the SEM.

In the BAFC 22306 specimen, the columella apex has a small expansion resembling that of *Stemonitis flavogenita* but the spore characteristics confirm that it is *S. axifera*. Some collections of other *Stemonitis* species such as *S. fusca*



Figs. 30–35. ***Stemonitis axifera***. BAFC 22310 (30–32): 30. Columella and capillitium. 31 Spore (SEM). 32. Spore ornamentation. BAFC 22306 (33–35): 33. Capillitium. 34 Spore (SEM). 35. Spore ornamentation. Bars: 30, 33 = 20 µm; 31, 34 = 2 µm; 32, 35 = 0.5 µm.

occasionally exhibit funnel-shaped expansions at the apex of the columella. The spore and capillitium characteristics need to be studied carefully to avoid misidentification.

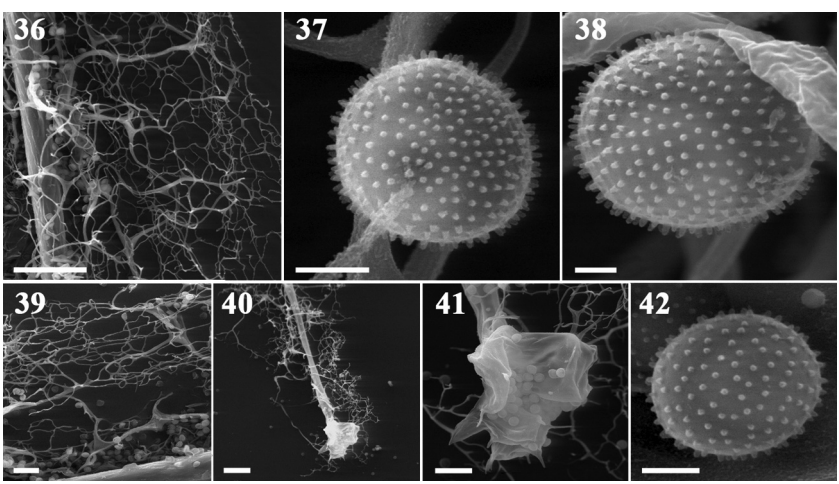
Stemonitis axifera is a cosmopolitan species (Martin & Alexopoulos 1969). Moreno & al. (2004) synonymized *Stemonitis smithii* with *S. axifera*, noting that although the spore dimensions varied, the spore ornamentation was the same.

Stemonitis flavogenita E. Jahn, Verh. Bot. Vereins Prov. Brandenburg 45: 165 (1904)
Figs. 36–42

Specimens examined: **ARGENTINA**, **Buenos Aires**, Castelar, INTA, I-1970, leg. E. del Busto & J. Deschamps (BAFC 22298): Llavallol, Santa Catalina, 6-IV-1970, leg. J. Deschamps (BAFC 22291).

Comments — The specimens studied are characteristic for their stipitate aggregated sporocarps, 15–18(–20) mm total height. Sporothecae dark brown, cylindrical, 9–12 × 0.4–0.5 mm. Stalk cylindrical, dark reddish, 4–5 mm total height. Capillitium formed by filaments with short spines, forming an peridial net with meshes of 15–55 µm diam. and an internal net of very wide meshes. Columella widened into an apical funnel up to 120 µm diam. Spores globose, 7–8 µm diam., dark violet in mass, very light violet by LM, slightly warted. The spore ornamentation is formed by regularly distributed bacula (SEM).

Stemonitis flavogenita is very similar to *S. splendens* in spore ornamentation, but *S. splendens* lacks a columella funnel. This is a very widely distributed species, already recorded in Argentina (Deschamps 1976; Crespo & Lugo 2003).



Figs. 36–42. ***Stemonitis flavogenita***. BAFC 22291 (36–38): 36. Capillitium and columella. 37, 38. Spores (SEM). BAFC 22298 (39–42): 39. Capillitium. 40. Apex of columella. 41. Apex of columella (detail). 42. Spore (SEM). Bars: 36, 40 = 50 µm; 37, 42 = 2 µm; 38 = 1 µm; 39, 41 = 20 µm.

Stemonitis fusca Roth, Bot. Mag. (Römer & Usteri) 1(2): 26 (1787)

Specimen examined: **ARGENTINA**, **Buenos Aires**, Llavallol, Santa Catalina, Instituto Fitotécnico, 5-VI-1970, leg. J.E. Deschamps (BAFC 22296, as *S. virginiensis*).

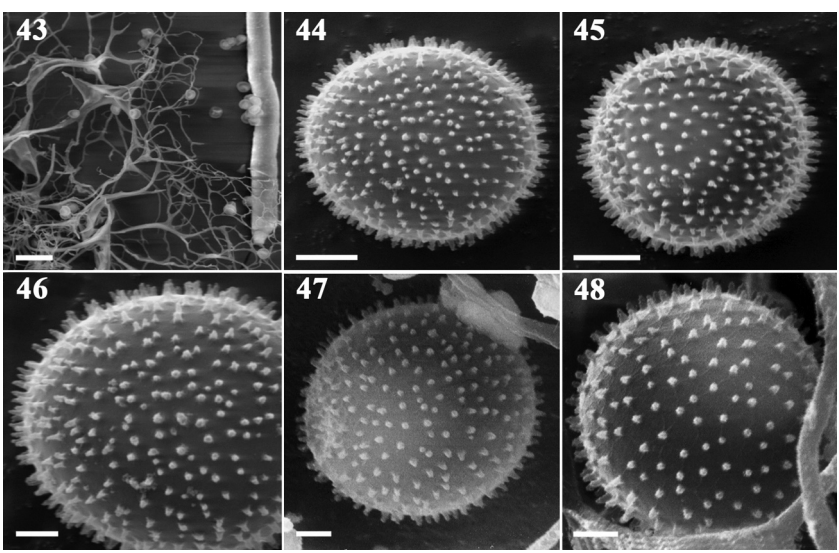
Comments — The spore ornamentation is reticulate with 8-10 meshes per hemisphere. This ornamentation and the larger spore size distinguishes *Stemonitis fusca* from *Stemonitis virginiensis* Rex. More information about these species can be found in Castillo et al. (1997).

Stemonitis pallida Wingate, in Macbride, N. Amer. Slime-moulds: 123 (1899)

Figs. 43–48

Specimens examined: **ARGENTINA**, **Buenos Aires**, Llavallol, Santa Catalina, leg. C. Naranjo, 26-VI-1964, (BAFC 22309); La Plata, Punta Lara, Arroyo Las Cañas, on log remains, 10-III-1971, leg. del Busto & J. Deschamps (BAFC 22289). **USA**: **Pennsylvania**, Delaware Co., on rotten wood, coll. Hugo Bilgram, Ellis & Everhart, North American Fungi Second series 3498 (BPI 802957, isotype).

Comments — This specimen is characterized by its aggregated and stipitate sporocarps of 4–6 mm total height. Stalk 1–2 mm long, less than half the height of the sporocarp. Sporotheca cylindrical, dark brown, 0.4–0.5 × 0.3–0.4 mm. Capillitium an internal net with wide expansions (10–15 µm) and large meshes. Peridial net irregular, formed by hyaline to very pale small meshes, 7–20 µm diam. with short spines which make it distinct from otherwise similar species.



Figs. 43–46 ***Stemonitis pallida***. BAFC 22309 (43–46): 43. Capillitium (detail). 44, 45. Spores (SEM). 46. Spore ornamentation. BPI 802957 (Isotype): 47, 48. Spores (SEM). Bars: 43 = 20 µm; 44, 45 = 2 µm; 46–48 = 1 µm.

Spores globose, 7–8 µm diam., pale lilaceous by LM, with abundant and regularly distributed warts. The ornamentation is formed by dense, long, narrow bacula (SEM), similar to that of Wingate's type material from Pennsylvania (USA).

Stemonitis pallida is a species close to *S. splendens,* which produces taller and darker sporocarps, a uniformly coloured capillitium, and a larger mesh size in the peripheral net. *Stemonitis pallida* is a widely distributed species, already cited from Argentina (Deschamps 1972; Crespo & Lugo 2003).

Stemonitis splendens Rostaf., Sluzowce monogr.: 195 (1874)

Specimens examined: **ARGENTINA**, **Buenos Aires**, Lavallol, Santa Catalina, on rotten wood, 3-XI-1968, leg. J. Deschamps (BAFC 22196, as *S. webberi*); II-1970, leg. J. Deschamps (BAFC 22294. as *S. pallida*); possibly on bark of *Ulmus procera* Salisb., 2-III-1970, leg. J. Deschamps (BAFC 22290, as *S. carolinensis*); San Clemente del Tuyu, on fallen log possibly of *Populus* sp., 24-II-1971, leg. G. Pousadela (BAFC 22285, as *S. flavogenita*). **USA**, **Virginia**, Radnor Heights, on *Pinus virginiana*, 20-VI-1935, leg. C.L. Shear (BAFC 22562).

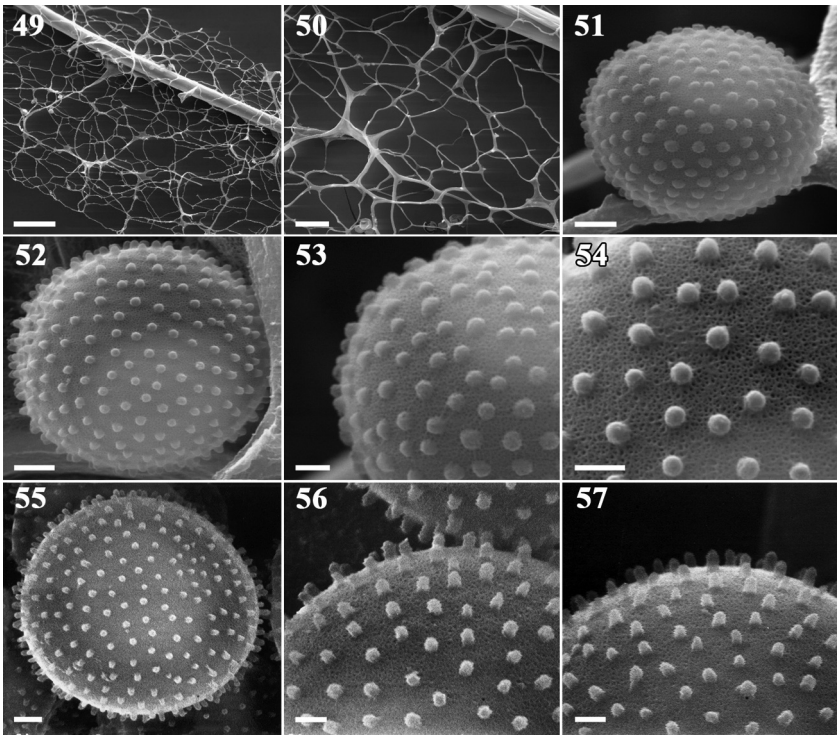
Comments — *Stemonitis splendens* is characterized by its grouped stipitate dark red sporocarps, 6–17(–20) mm total height. Sporothecae cylindrical, (8–)10–15 × 0.4–0.6 mm. Stalk dark red, cylindrical, hollow, 3–7 mm total height. Capillitium with branches more or less perpendicular to the columella, externally forming a net of wide meshes 50–80 µm diam. Spores globose, 6.5–8(–9) µm in diam., with regularly distributed warts. The SEM shows a spore ornamentation formed by abundant and evenly distributed bacula.

Stemonitis splendens is a species of variable size and morphology (Martin & Alexopoulos 1969). *Stemonitis flavogenita,* which displays a similar size and spore ornamentation under the SEM, is distinguished by a columellar apex lacking a membrane expanded into a cup-shape and smaller (15–55 µm) capillitial meshes. *Stemonitis pallida* can be differentiated by its shorter total height (4–6 mm) and a peridial net of hyaline to very pale meshes, less than 7–20 µm diam. and with short spines. SEM reveals spores with longer, denser bacula.

Stemonitis webberi Rex, Proc. Acad. Nat. Sci. Philadelphia 43: 390 (1891) Figs. 49–57

Specimens examined: **ARGENTINA**: **Buenos Aires**, Lavallol, Santa Catalina, on rotten wood, 9-V-1970, leg. L. Frias & G. Rovetta (BAFC 22297, as *S. carolinensis*); bark of *Ulmus procera*, 22-X-1972, leg. J. Deschamps & G. Rovetta (BAFC 22862, as *S. splendens*). **USA**: **Nebraska**, Lincoln, 1988, leg. H.J. Webber 15 (PH, type of *Stemonitis webberi*).

Comments — The Argentinean material is characterized by its sporocarps forming groups of 15–20 mm total height. Sporothecae cylindrical, dark brown, 9–12 mm high and 0.5–0.8 mm wide. Stalk dark red, 4–8 mm in length. Columella reaches to the apex where it gets thinner and becomes sinuous.



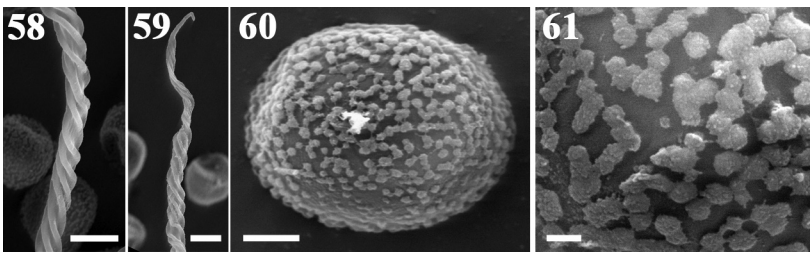
Figs. 49-57 ***Stemonitis webberi.*** BAFC 22297 (49–54): 49. Capillitium and columella. 50. Capillitium. 51, 52. Spores by SEM. 53, 54. Spore ornamentation. Type in PH: 55–57. 55. Spore (SEM). 56, 57. Spore ornamentation. Bars: 49 = 50 µm; 50 = 20 µm; 51, 55 = 2 µm; 52 = 1 µm; 53, 54, 56, 57 = 0.5 µm.

Capillitium is formed by an internal net of wide and angular meshes with an external net of wide meshes of more than 25 µm diam., formed by thin filaments, approximately 1–2 µm diam. and without spines. Spores globose to subglobose, (6.5–)7–8 µm in diam., dark violet, homogeneously warted. SEM reveals that the ornamentation is formed by regularly distributed thick bacula and that the spore surface is covered by a complete reticulum.

Stemonitis webberi type description: Sporocarps in groups; dark brown. Sporotheca cylindrical, 4–7 mm height. Stalk reddish of 3–4 mm height. Capillitium formed by an internal net of large wide meshes, membranous expansions in the anastomoses and a peripheral net slightly formed. Spores globose, 7–7.5 µm diam., light grey with a paler outline and evenly distributed spines. By SEM the spores have an ornamentation formed by regularly scattered bacula distributed over the entire spore surface, which appears to have a slightly reticulate ornamentation.

Stemonitis webberi, which shares with *S. splendens* a similar capillitium morphology and spore size, can be differentiated only by SEM due to its specific spore ornamentation.

Stemonitis axifera also has a similar reticulum on the spore surface that is observable only by SEM and which cannot be seen by LM. It can be distinguished by its capillitium with different meshes, different spore size, and an ornamentation with more scarce, irregularly distributed warts.



Figs. 58-61 ***Trichia subfusca*** (BAFC 22180): 58. Capillitial elater. 59. Free end of elater. 60. Spore (SEM). 61. Spore ornamentation. Bars: 58, 59 = 5 µm; 60 = 2 µm; 61 = 0.5 µm.

Trichia subfusca Rex, Proc. Acad. Nat. Sci. Philadelphia 42: 192 (1890) Figs. 58–61

Specimens examined: **ARGENTINA**, **Buenos Aires**, Punta Lara, Boca Cerrada, on rotten wood, 10-5-1969, leg. J. Deschamps (BAFC 22180, as *T. pusilla*). **USA**, **West Virginia**, Monongalia Co., Cooper's Rock State Park, Morgantown, 500 m altitude, on white-rotted logs of *Tsuga canadensis,* 16-IX-2000, leg. M. Schnittler & D.W. Mitchell (DWM 6171).

Comments — Sporocarps scattered and stipitate, 1.1–1.5 mm total height, stalk fibrous, darker than the sporotheca, 2–3 mm total height. Sporothecae globose to subpyriform, (0.4–0.5 mm diam.), dark brown with red shades. Peridium with apical irregular dehiscence, without dehiscence lines marked as in *Trichia botrytis* (J.F. Gmel.) Pers. Capillitium formed by yellow elaters of 3–4 µm diam., with three smooth spirals and free ends approximately 25 µm long. Spores pale yellow, 9–11 µm diam., regularly warted by LM. By SEM, the spores have relatively large capitate pila that tend to coalesce with adjacent pila (Rammeloo 1974).

Our material has a longer stalk than found in descriptions of *T. subfusca* by other authors as well as smaller spores (cf. 11–15 µm; Martin & Alexopoulos 1969). The American specimen of *T. subfusca* (DWM 6171), however, resembles our specimen in spore size and other dimensions.

Trichia decipiens var. ***olivacea*** (Meyl.) Meyl., Bull. Soc. Vaud. Sci. Nat. 55: 244 (1924)

Specimens examined: **ARGENTINA, Tierra del Fuego**, Valle Carbajal, in moss and hepatics on wood, 20-II-1961, leg. I. Gamundí (BAFC 22187, as *Trichia pusilla*); on the

road to Martial glacier, on rotten wood, 16-I-1964, leg. I. Gamundí (BAFC 22193, as *Trichia pusilla*).

Comments — This variety is characterized by its abruptly stipitate sporocarps, more or less operculate dehiscence, and spores with low crests.

Tubifera ferruginosa (Batsch) J.F. Gmel., Syst. nat. 2: 1472 (1792)

Specimen examined: **ARGENTINA**, **Entre Rios**, Departamento Victoria, Molino Doll, on bark of *Populus nigra* var. *italica* Koehne, 1-I-1972, leg. J. Deschamps (BAFC 22552, as *T. casparyi*).

Comments — This cosmopolitan species forms large pseudoaethalia with a well-developed hypothallus, usually over log debris. It is characterized by its reticulate spores (6–8 µm diam.) with uniformly sized meshes.

BAFC 22552 was misdetermined as *Tubifera casparyi* (Rostaf.) T. Macbr., a species with a central pseudocolumella, a structure absent from *T. ferruginosa* and BAFC 22552.

Tubifera microsperma (Berk. & M.A. Curtis) G.W. Martin, Mycologia 39(4): 461 (1947)

Specimens examined: **ARGENTINA**, **Tucumán**, Chicligasta, Alpachiri, 1-XII-1946, leg. A.Garolera (BAFC 30276 [ex LIL C-7550]). **Santa Fé**, Venado Tuerto, on fallen log, 23-III-1970, leg. D. Murray (BAFC 22253).

Comments — This species is easily recognized by its fructifications that usually form a stipitate pseudoaethalium, by small spores (4–5.5 µm diam.) and an inner verrucose peridium by LM and which, by SEM, appears as a surface with small raised tubules reminiscent of octopus suckers (Moreno et al. 2004).

Results

In this first contribution to the myxomycetes of BAFC, we concluded from our study of 32 specimens (26 from Argentina, 5 from the USA, 1 from Brazil) that:

(1) The 32 revised specimens represent 20 taxa (19 species and 1 variety) and resulted in redetermination of the following collections (Table 1):

(2) *Trichia decipiens* var. *olivacea* is added to the Argentinean myxomycete catalogue.

(3) *Diderma meyerae* is added to the USA and North American myxomycete catalogues.

(4) *Badhamia cinerascens*, *Reticularia intermedia*, *S. virginiensis*, and *Tubifera casparyi* are deleted from the Argentinean myxomycete catalogue.

(5) Type materials of *Stemonitis pallida* and *S. webberi* are revised and described.

Table 1. BAFC collections redetermined as a result of the current study

Previous incorrect label	Correct name
Badhamia cinerascens BAFC 22822	*Badhamia affinis*
Diderma niveum BAFC [ex Bridge Cooke Herbarium 34923]	*Diderma meyerae*
Physarum polycephalum BAFC 22130	*Physarum compressum*
Reticularia intermedia BAFC 22846	*Reticularia jurana*
Stemonitis carolinensis BAFC 22290	*Stemonitis splendens*
Stemonitis carolinensis BAFC 22297	*Stemonitis webberi*
Stemonitis flavogenita BAFC 22285	*Stemonitis splendens*
Stemonitis flavogenita BAFC 22306 and BAFC 22310	*Stemonitis axifera*
Stemonitis pallida BAFC 22294	*Stemonitis splendens*
Stemonitis splendens BAFC 22862	*Stemonitis webberi*
Stemonitis virginiensis BAFC 22296	*Stemonitis fusca*
Stemonitis webberi BAFC 22196	*Stemonitis splendens*
Trichia pusilla BAFC 22180	*Trichia subfusca*
Trichia pusilla BAFC 22187 and BAFC 22193	*Trichia decipiens* var. *olivacea*
Tubifera casparyi BAFC 22552	*Tubifera ferruginosa*

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